

**State of California
AIR RESOURCES BOARD**

**Executive Order VR-104-B
CNI Manufacturing Phase I Vapor Recovery System**

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during the filling of underground gasoline storage tanks, in its **CP-201, *Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities*** (Certification Procedure) as last amended February 9, 2005 incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, test procedures for determining the compliance of Phase I vapor recovery systems with emission standards;

WHEREAS, CNI Manufacturing requested and was granted certification of the CNI Manufacturing Phase I Vapor Recovery System (CNI Manufacturing System) pursuant to the Certification Procedure on September 26, 2003 by Executive Order VR-104-A;

WHEREAS, CNI Manufacturing requested a further modification to the certification to include a Stand Alone (Direct Bury) Spill Container;

WHEREAS, the requested modification to the certification of the CNI Manufacturing system has been evaluated pursuant to the Certification Procedure;

WHEREAS, the Certification Procedure provides that the ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities (GDF); and

WHEREAS, I, William V. Loscutoff, Chief of the Monitoring and Laboratory Division, find that the CNI Manufacturing Phase I Vapor Recovery System, including modifications, conforms with all of the requirements set forth in the Certification Procedure and results in a vapor recovery system which is at least 98.0 percent efficient as tested in accordance with test procedure **TP-201.1, *Volumetric Efficiency for Phase I Systems (October 8, 2003)***;

NOW THEREFORE, IT IS HEREBY ORDERED that the CNI Manufacturing System is certified to be at least 98.0 percent efficient when installed and maintained as specified herein and in the following exhibits. Exhibit 1 contains a list of the certified components, Exhibit 2 contains the performance standards and specifications, typical installation drawings, and maintenance

intervals applicable to the CNI Manufacturing System as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing specifications.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that CNI Manufacturing shall provide a warranty for the vapor recovery system and components to the initial purchaser. The warranty shall be passed on to each subsequent purchaser within the warranty period. The manufacturer of components listed in Exhibit 1 not manufactured by CNI Manufacturing shall provide a warranty to each of their components certified herein. The warranty shall include the ongoing compliance with all applicable performance standards and specifications, and shall comply with all warranty requirements in Section 9.2 of the Certification Procedure. CNI Manufacturing or other manufacturers may specify that the warranty is contingent upon the use of trained installers.

IT IS FURTHER ORDERED that every certified component manufactured by CNI Manufacturing, Husky, and EMCO Wheaton shall be performance tested by the manufacturer as provided in Exhibit 3.

IT IS FURTHER ORDERED that the certified CNI Manufacturing System shall be installed and maintained in accordance with the **ARB-Approved Installation, Operation and Maintenance Manual for the CNI Manufacturing Phase I Vapor Recovery System**. A copy of this Executive Order and manual shall be maintained at each GDF where a certified CNI Manufacturing System is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, shall be clearly identified by a permanent identification showing the manufacturers name, model number and serial number unless exempted in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that any alteration in the equipment parts, design, installation or operation of the system certified hereby is prohibited and deemed inconsistent with this certification unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer's delegate.

IT IS FURTHER ORDERED that the following requirements be made a condition of certification. The owner or operator of the CNI Manufacturing System shall conduct, and pass, the following tests no later than 60 days after startup and at least once every (3) years after startup testing, using the following test procedures: TP-201.3, **Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities (March 17, 1999)**, TP-201.1B, **Static Torque of Rotatable Phase I Adaptors (October 8, 2003)** and TP-201.1C, **Leak Rate of Drop Tube/Drain Valve Assembly (October 8, 2003)**. Shorter time periods may

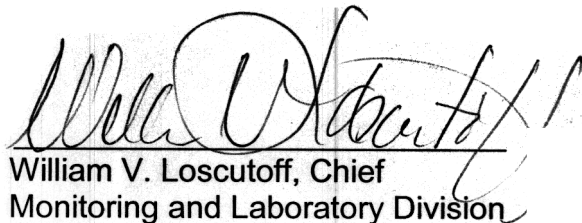
be specified in accordance with local district requirements. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements and pursuant to the policies established by that district. Testing the pressure/vacuum (P/V) vent valve will be at the option of the local districts. If P/V vent valve testing is required by the district, the test shall be conducted in accordance with TP-201.1E, **Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003)**. Alternate test procedures, including most recent versions of test procedures listed above, may be used if determined by the ARB Executive Officer or Executive Officer delegate, in writing, to yield equivalent results.

IT IS FURTHER ORDERED that the CNI Manufacturing System shall be compatible with gasoline in common use in California at the time of certification and any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer's delegate.

IT IS FURTHER ORDERED that Executive Order VR-104-A issued on September 26, 2003 is hereby superceded by this Executive Order. CNI Manufacturing Phase I Vapor Recovery System certified under Executive Order VR-104-A may remain in use at existing installations. This Executive Order shall apply to new installations or major modification of existing gasoline dispensing facilities.

IT IS FURTHER ORDERED that the certification of the CNI Manufacturing Phase I Vapor Recovery System is valid through September 30, 2007.

Executed at Sacramento, California, this 13th day of December 2005.



William V. Loscutt, Chief
Monitoring and Laboratory Division

Attachments:

- Exhibit 1 CNI Manufacturing Phase I Vapor Recovery System Equipment List
- Exhibit 2 Installation, Maintenance and Compliance Standards and Specifications
- Exhibit 3 Manufacturing Performance Standards and Specifications

Executive Order VR-104-B CNI Manufacturing Phase I Vapor Recovery System

Exhibit 1 CNI Manufacturing Phase I Vapor Recovery System Equipment List

<u>Equipment</u>	<u>Manufacturer/Model Number</u>
Pressure/Vacuum Vent Valve	Husky Model 4885, 2-Inch Threaded
Containment Assembly	CNI Manufacturing XXXX-31103 Sump Configuration: (includes product and vapor side assemblies) XXXX (four digit code) indicates: Manhole Size (inches) Manhole Configuration (round, square, or rectangular) Container Cover (snap tight or gravity) Number of Openings in Manhole Size of Spill Container (gallons) Stand Alone Configuration: XXXX (four digit code) indicates: Snap-Tight Cover 205P – Product Assembly 205V – Vapor Assembly Gravity Cover 214P – Product Assembly 214V – Vapor Assembly
Drain Valve	CNI Manufacturing RP12-Push
Dust Caps	CNI Manufacturing 64 (product) CNI Manufacturing 611-VR-3 (vapor)
Product Adaptor	EMCO Wheaton Retail A0030-124
Vapor Adaptor	EMCO Wheaton Retail A0076-124
Extractor Assembly ¹	CNI Manufacturing 118-F/M (4x4x3x3, 4-way extractor) CNI Manufacturing 119-F/M (4x4x3x2, 4-way extractor) CNI Manufacturing 121-F/M (4x4x2, 3-way extractor) CNI Manufacturing 125- (extractor coupling)
Ball Float Vent Valve ¹	CNI Manufacturing 123-12C (various lengths) (optional)
Jam Nut	CNI Manufacturing 200JN
Drop Tube	CNI Manufacturing DT100 (various lengths)

¹ Component optional for vapor recovery; other state or local agency regulations may apply.

Drop Tube O-Ring CNI Manufacturing RP101

Tank Gauge Port Components CNI Manufacturing 613BC (cap and adaptor)

Table 1
Components Exempt from Identification Requirements

Component Name	Manufacturer	Model Number
Replacement Drain Valve	CNI Manufacturing	RP12-Push
Jam Nut	CNI Manufacturing	200 JN
Tank Gauge Port Component (Cap and Adaptor)	CNI Manufacturing	613BC
Drop Tube O-Ring	CNI Manufacturing	RP101
Containment System	CNI Manufacturing	XXXX-31103
Ball Float Vent Valve	CNI Manufacturing	123-12C
Drop Tube	CNI Manufacturing	DT-100

Executive Order VR-104-B CNI Manufacturing Phase I Vapor Recovery System

**Exhibit 2
Installation, Maintenance and Compliance Standards and Specifications**

This exhibit contains the installation, maintenance and compliance standards and specifications applicable to a CNI Manufacturing Phase I Vapor Recovery System (CNI Manufacturing System) installed in a gasoline dispensing facility (GDF).

General Specifications

1. Typical installations of the CNI Manufacturing System are shown in Figures 2A, 2B, 2C and 2D.
2. The CNI Manufacturing System shall be installed, operated and maintained in accordance with the ***ARB Approved Installation, Operation and Maintenance Manual for the CNI Manufacturing Phase I Vapor Recovery System***.
3. Any repair or replacement of system components shall be done in accordance with the ***ARB Approved Installation, Operation and Maintenance Manual for the CNI Manufacturing Phase I Vapor Recovery System***.
4. The CNI Manufacturing System shall comply with the applicable performance standards and performance specifications in CP-201. Compliance of the system and all components shall be demonstrated in accordance with the latest adopted version of ***TP-201.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities (March 17, 1999)***.
5. There shall be at least one vapor recovery connection, throughout all Phase I deliveries, between the cargo tank and the GDF storage tank into which gasoline is being delivered to ensure that vapor is returned to the cargo tank from the underground storage tank system.

Pressure/Vacuum Vent Valves For Storage Tank Vent Pipes¹

1. No more than three certified pressure/vacuum vent valves (P/V Valves) listed in Exhibit 1 shall be installed on any GDF underground storage tank system.
2. Compliance determination of the following P/V valve performance specifications shall be at the option of the districts:
 - a. The leak rate of each P/V valve shall not exceed 0.05 cubic feet per hour (CFH) at 2.0 inches of H₂O positive pressure and 0.21 CFH at -4.0 inches negative pressure as determined by TP-201.1E, ***Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003)***.

¹ The requirement that the vent pipe manifold be installed at a height not less than 12 feet above the grade stated in Executive Order VR-104-A is rescinded.

- b. The positive pressure setting is 3.0 ± 0.5 inches of H_2O and the negative pressure setting is -8.0 ± 2.0 inches of H_2O as determined by TP-201.1E, **Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003)**.
3. A manifold may be installed on the vent pipes to reduce the number of potential leak sources and P/V valves installed. Vent pipe manifolds shall be constructed of steel pipe or an equivalent material that has been listed for use with gasoline. If a material other than steel is used, the GDF operator shall make available information demonstrating that the material is compatible for use with gasoline. One example of a typical vent pipe manifold is shown in Figure 2E. This shows only one typical configuration: other manifold configurations may be used. For example, a tee may be located in a different position, or fewer vent pipes may be connected, or more than one P/V valve may be installed on the manifold.
4. Each P/V valve shall have permanently affixed to it a yellow or gold-colored label with black lettering stating the positive and negative cracking pressures.

Positive pressure setting: 3.0 ± 0.5 inches H_2O
Negative pressure setting: -8.0 ± 2.0 inches H_2O
Positive Leak rate: 0.05 CFH at 2.0 inches H_2O
Negative Leak rate: 0.21 CFH at -4.0 inches H_2O

Rotatable Product and Vapor Recovery Adaptors

1. Rotatable product and vapor recovery adaptors shall be capable of at least 360-degree rotation and have an average static torque not to exceed 108 pound-inch (9 pound-foot). Compliance with this requirement shall be demonstrated in accordance with TP-201.1B, **Static Torque of Rotatable Phase I Adaptors (October 8, 2003)**.

Use CNI Manufacturing Torque Test Tool Part Number EVRSYS100 rather than Phil-Tite Torque Test Tool Part Number 6004 as specified in Section 5.2 of TP-201.1B. The Phil-Tite tool is not compatible with CNI Manufacturing dust caps.

2. The vapor adaptor poppet shall not leak when closed. Compliance with this requirement may be verified by the use of commercial liquid leak detection solution, or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

Vapor Recovery and Product Adaptor Dust Caps

1. Dust caps with intact gaskets shall be installed on all Phase I tank adaptors.

Spill Container Drain Valve

1. The spill container drain valve shall be configured to drain liquid directly into the drop tube and shall be isolated from the underground storage tank ullage space. The leak rate of the drain valve shall not exceed 0.17 CFH at 2.00 inches H_2O . Compliance with this requirement shall be demonstrated in accordance with TP-201.1C, **Leak Rate of Drop Tube/Drain Valve Assembly (October 8, 2003)**.

Ball Float Vent Valve

1. A Ball Float vent valve (ball float) is designed to restrict the flow of a gasoline delivery by using back pressure when the storage tank levels exceed a specified level. If installed for overfill prevention, a ball float must be installed at each vapor and vent connection to the tank. Ball floats are not required components of the vapor recovery system, but may be installed as optional components for vapor recovery; other state or local agency regulations may apply.

Vapor Recovery Riser Offset

1. The vapor recovery tank riser may be offset from the tank connection to the vapor recovery Spill Container provided that the maximum horizontal distance (offset distance) does not exceed twenty (20) inches. One example of an offset is shown in Figure 2F.
2. The vapor recovery riser may be offset up to 20 inches horizontal distance with use of commercially available, four (4) inch diameter steel pipe fittings.

Tank Gauge Port Components

1. The tank gauge adaptor and cap are paired. Therefore, an adaptor manufactured by one company shall be used only with a cap manufactured by the same company.

Connections and Fittings

1. All connections and fittings not specifically certified with an allowable leak rate shall not leak. The absence of vapor leaks may be verified with the use of commercial liquid leak detection solution, or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

Maintenance Records

1. Each GDF operator/owner shall keep records of maintenance performed at the facility. Such record shall be maintained on site or in accordance with district requirements or policies. The records shall include the maintenance or test date, repair date to correct test failure, maintenance or test performed, and if applicable, telephone number and name of individual conducting maintenance or test. An example of a GDF Maintenance Record is shown in Figure 2G.
2. Maintenance shall be conducted in accordance with CNI Manufacturing Scheduled Maintenance document as shown in the ***ARB Approved Installation, Operation and Maintenance Manual for the CNI Manufacturing Phase I Vapor Recovery System.***

Table 2-1
Gasoline Dispensing Facility Compliance Standards and Specifications

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Spill Container Drain Valve	TP-201.1C	≤ 0.17 CFH at 2.00 inches H ₂ O
P/V Vent Valve ²	TP-201.1E	Positive pressure setting: 3.0 ± 0.5 inches H ₂ O Negative pressure setting: -8.0 ± 2.0 inches H ₂ O Positive Leak rate: 0.05 CFH at 2.0 inches H ₂ O Negative Leak rate: 0.21 CFH at -4.0 inches H ₂ O
Gasoline Dispensing Facility	TP-201.3	As specified in TP-201.3 and/or CP-201
All connections and fittings certified without an allowable leak rate	Leak Detection Solution or bagging	No Leaks

Table 2-2
Maintenance Intervals for System Components

Manufacturer	Component	Maintenance Interval
Husky	Pressure/Vacuum Vent Valve	Annual
CNI Manufacturing	Tank Gauge Port Components	Annual Inspection
CNI Manufacturing	Dust Caps	Annual Inspection
CNI Manufacturing	Drop Tube	Annual Test
CNI Manufacturing	Ball Float	Three Years
EMCO Wheaton Retail	Rotatable Phase I Product and Vapor Adaptors	Annual Tests
CNI Manufacturing	Spill Container Drain Valve	18 Months
CNI Manufacturing	Spill Container	Annual Inspection and After Each Delivery

² Compliance determination at the option of the district

Figure 2A

Typical Product Side Installation of CNI Manufacturing System

Typical Product side XXXX-31103

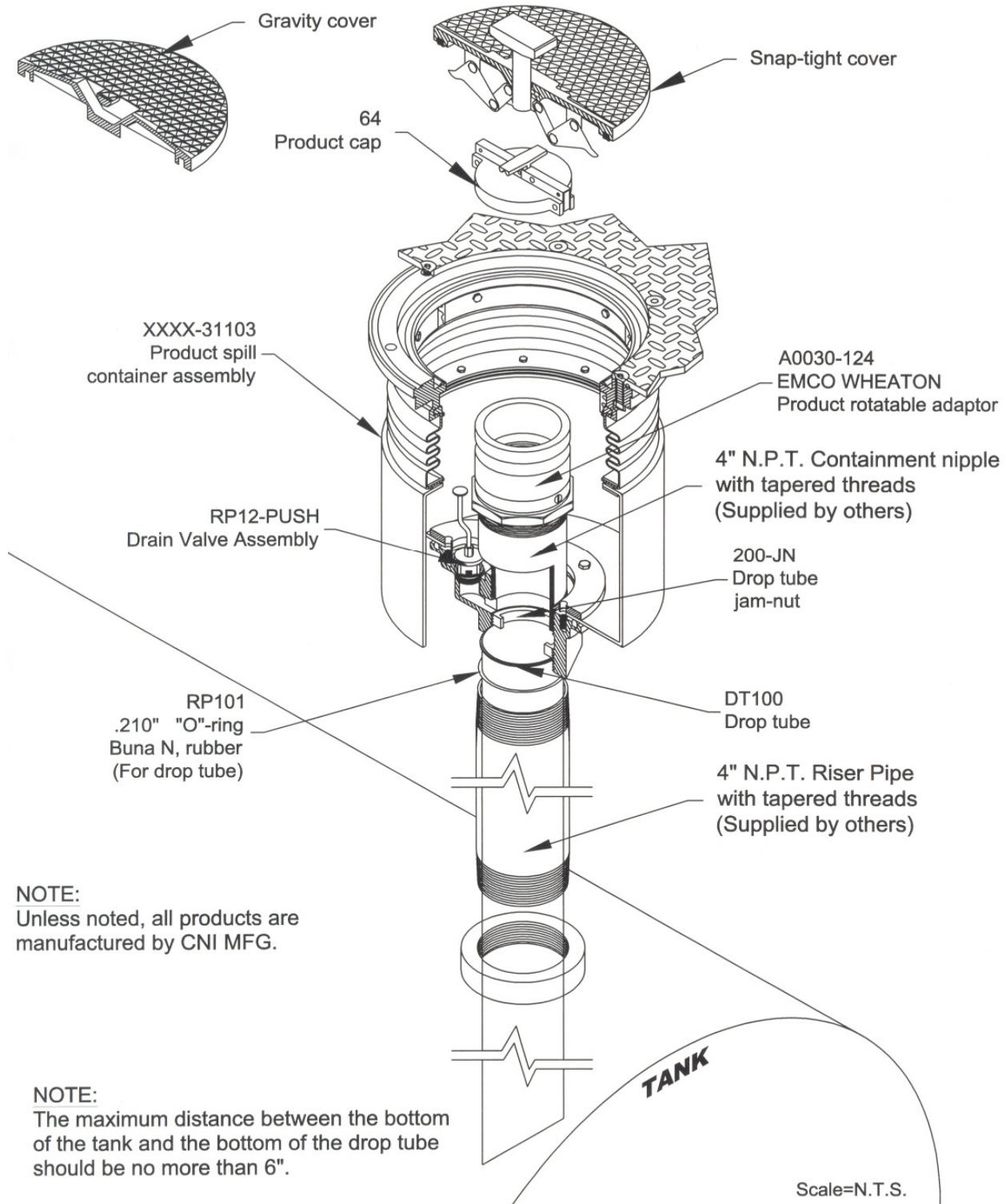


Figure 2B

Typical Vapor Recovery Installation of CNI Manufacturing System

Typical Vapor Side XXXX-31103

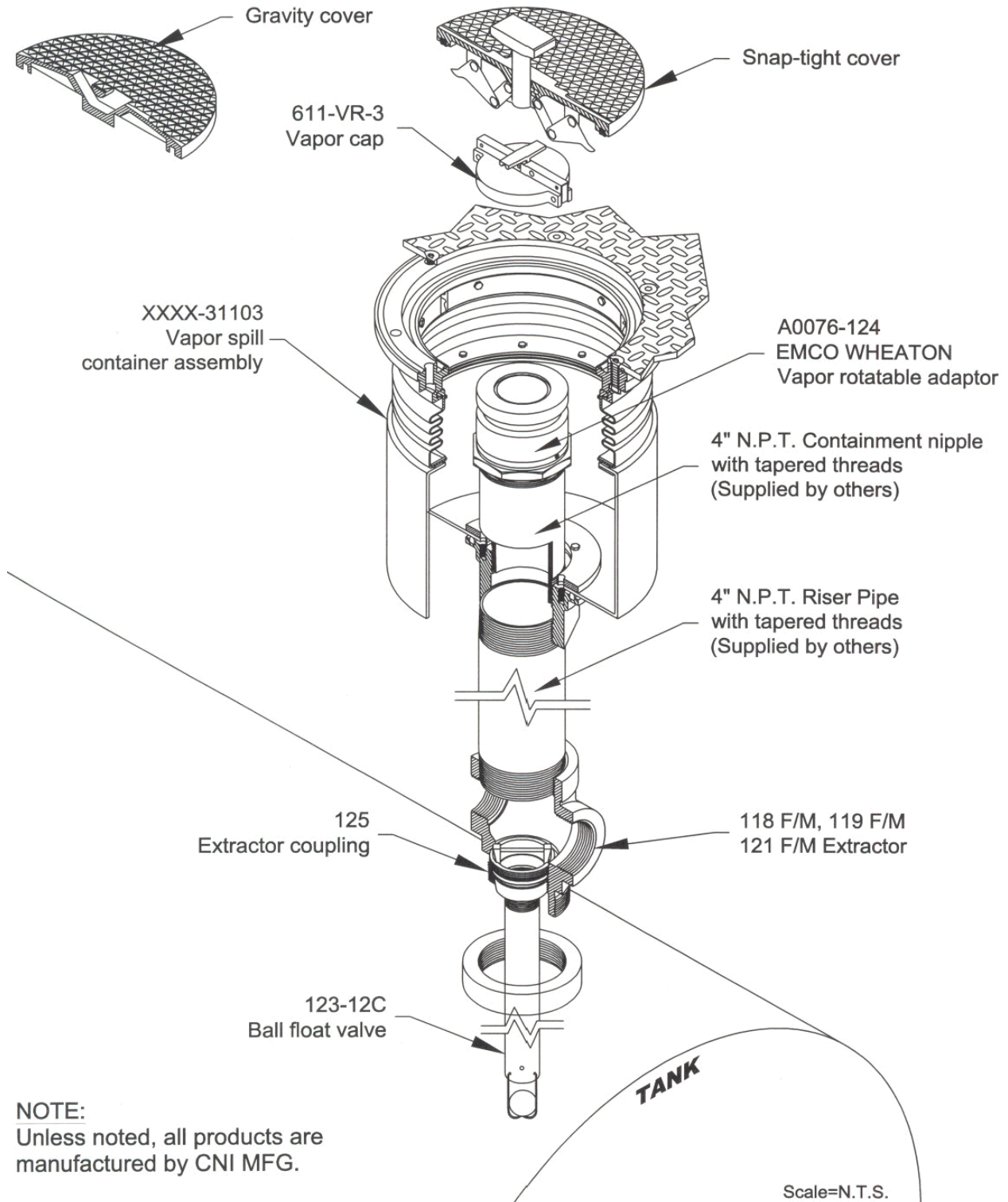


Figure 2C

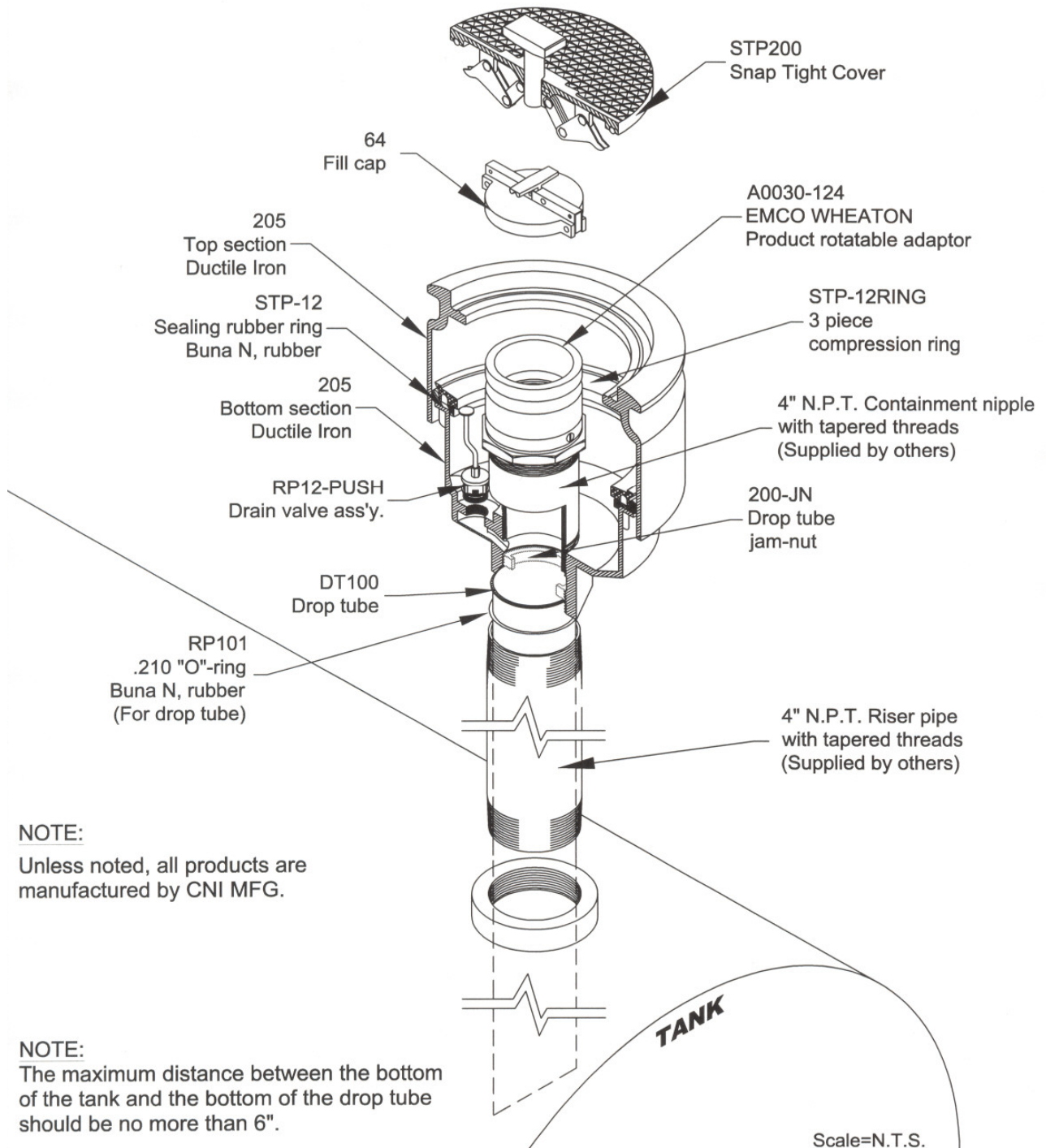
Typical Product Side Installation of CNI Manufacturing System



STAND ALONE CONTAINMENT

Typical Product side for direct bury

Model No. 205P with Snap-tight Cover XXXX-31103



NOTE:

Unless noted, all products are manufactured by CNI MFG.

NOTE:

The maximum distance between the bottom of the tank and the bottom of the drop tube should be no more than 6".

Scale=N.T.S.

Figure 2D

Typical Vapor Side Installation of CNI Manufacturing System



STAND ALONE CONTAINMENT

Typical Vapor side for direct bury

Model No. 205V with Snap-tight Cover XXXX-31103

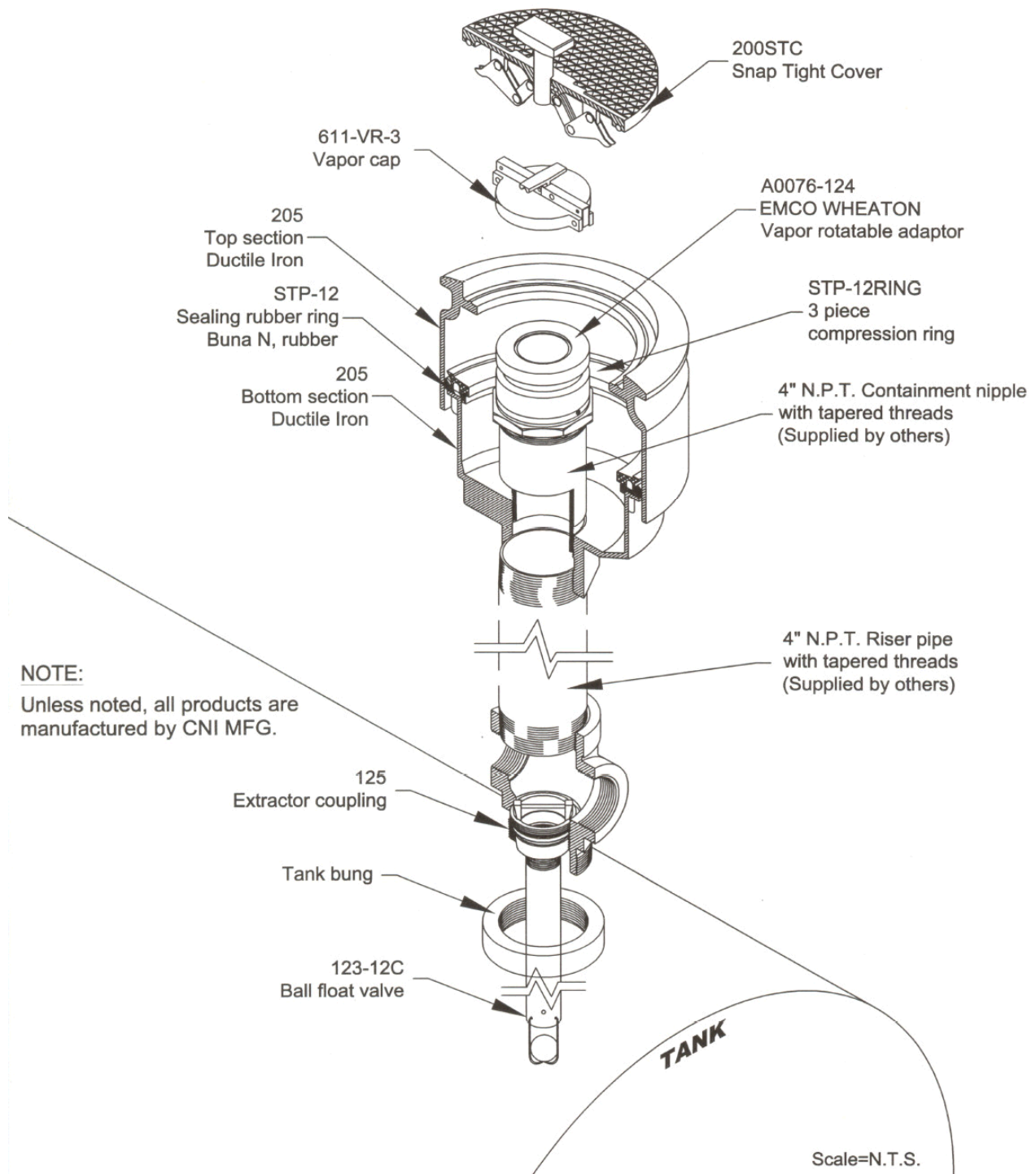
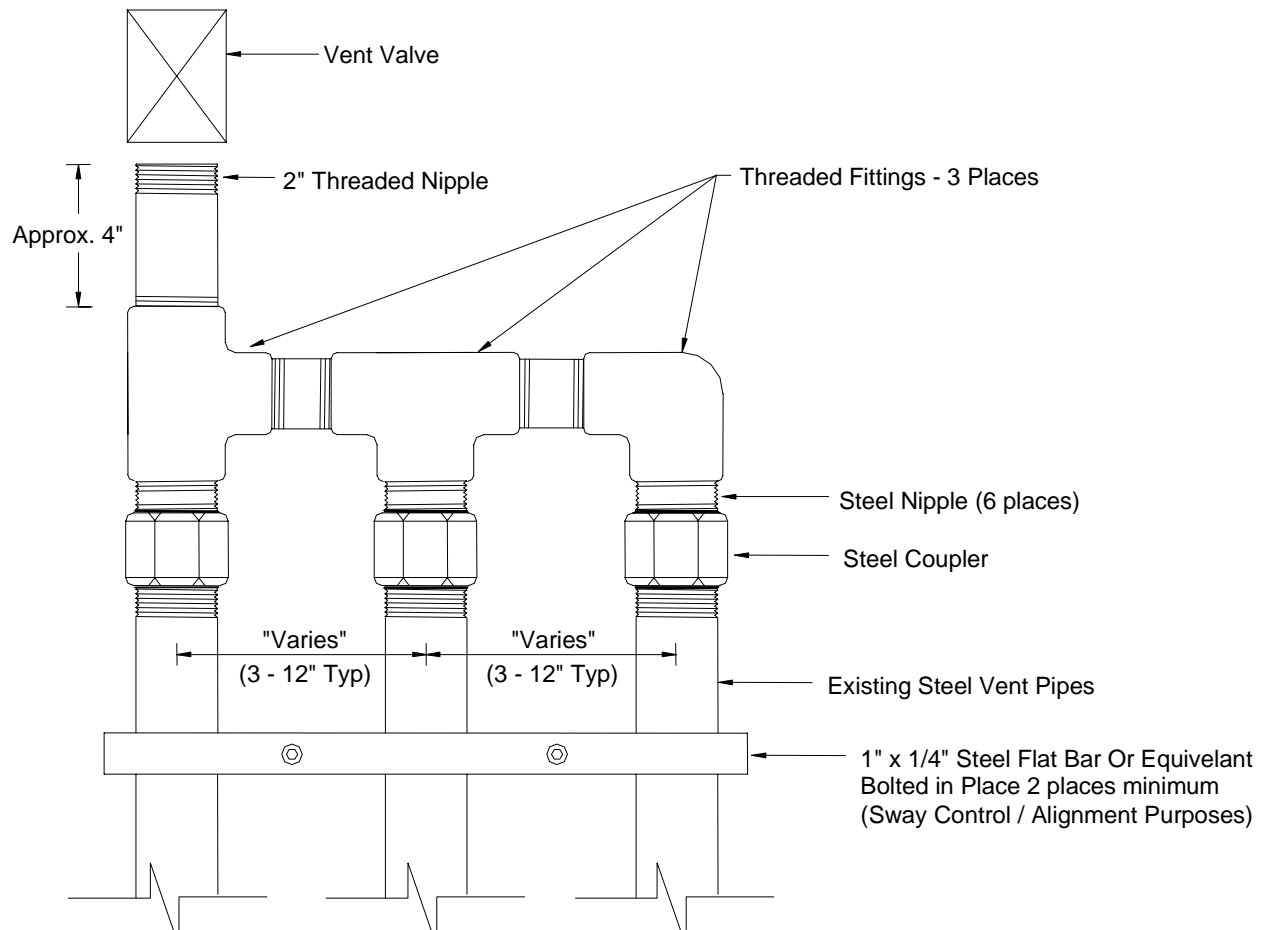


Figure 2E

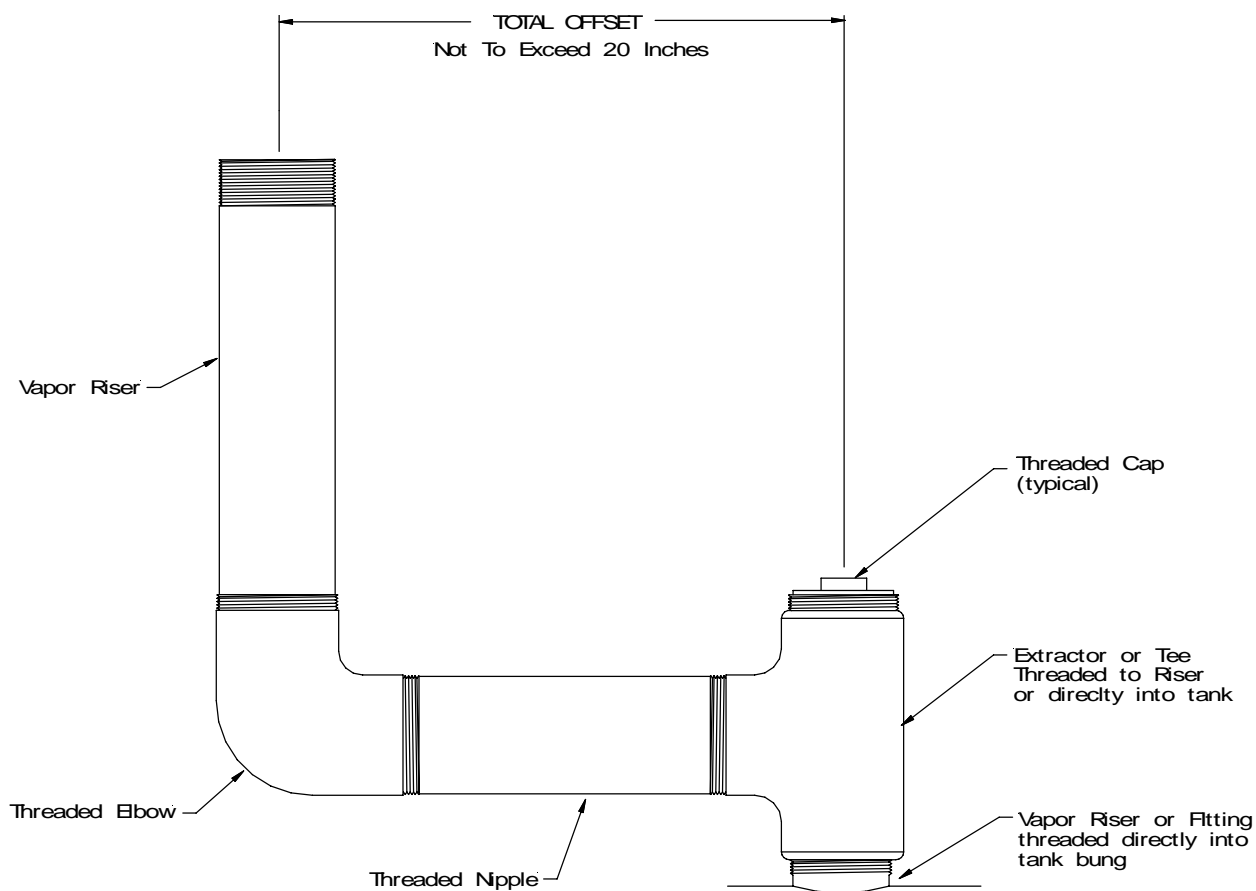
Typical Vent Pipe Manifold



Note: This shows only one typical configuration; other manifold configurations may be used. For example, a tee may be located in a different position, or fewer vent pipes may be connected, or more than one P/V valve may be installed on the manifold.

Figure 2F

Typical Vapor Recovery Riser Offset



Note: This figure represents one instance where a vapor recovery riser has been offset in order to construct a two-point Phase I vapor recovery system. The above figure illustrates an offset using a 90-degree elbow. However, in some instances, elbows less than 90 degrees may be used. All fittings and pipe nipples shall be 4-inch diameter similar to those of the spill container and rotatable Phase I adaptors in order to reduce back pressure during a gasoline delivery.

Figure 2G

Example of a GDF Maintenance Record

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Executive Order VR-104-B CNI Manufacturing Phase I Vapor Recovery System

Exhibit 3 Manufacturing Performance Standards and Specifications

The CNI Manufacturing System and all components shall be manufactured in compliance with the applicable Phase I performance standards and specifications in CP-201, as well as the requirements specified in this Executive Order. All components shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer. Unless specified in Exhibit 2 or in the **ARB Approved Installation, Operation and Maintenance Manual for the CNI Manufacturing Phase I Vapor Recovery System**, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a GDF.

Pressure/Vacuum Vent Valves for Storage Tank Vent Pipes

1. Each pressure/vacuum vent valve (P/V valve) shall be tested at the factory for cracking pressure and leak rate at each specified pressure setting when tested in accordance with TP-201.1E, **Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves (October 8, 2003)**.
2. Each P/V valve shall be shipped with a card or label stating the performance specifications listed in Table 3-1, and a statement that the valve was tested to, and met, these specifications:
 - a. The pressure settings for the P/V valve
 - Positive pressure setting of 3.0 ± 0.5 inches H_2O .
 - Negative pressure setting of -8.0 ± 2.0 inches H_2O .
 - b. The leak rate for each P/V valve, including connections, shall not exceed:
 - 0.05 CFH at 2.0 inches H_2O .
 - 0.21 CFH at -4.0 inches H_2O .
3. Each P/V valve shall have permanently affixed to it a yellow or gold label with black lettering listing the positive and negative pressure settings specified above. The lettering of the label shall have a minimum font size of twenty (20).

Rotatable Product and Vapor Recovery Adaptors

1. The rotatable product and vapor recovery adaptors shall not leak.
2. The product adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3A of CP-201.
3. The vapor recovery adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3B of CP-201.
4. Each product and vapor recovery adaptor shall be tested at the factory to, and met, the following specifications and shall have affixed to it a card or label listing the following

performance specification and a statement that the adaptor was tested to, and met, such specifications:

- a. The average static torque for the rotatable adaptor shall not exceed 108 pound-inch average static torque when tested in accordance with TP-201.1B, **Static Torque of Rotatable Phase I Adaptors (October 8, 2003)**.
- b. The rotatable adaptor shall be capable of rotating at least 360 degrees when tested in accordance with TP-201.1B, **Static Torque of Rotatable Phase I Adaptors (October 8, 2003)**.

Spill Container and Drain Valves

1. Each spill container drain valve shall be tested at the factory to, and met, the following specifications and shall have affixed to it a card or label listing the following performance specifications and a statement that the drain valve was tested to, and met, such performance specification:
 - a. The maximum leak rate shall not exceed 0.17 CFH at 2.00 inches H₂O when tested in accordance with TP-201.1C, **Leak Rate of Drop Tube/Drain Valve Assembly (October 8, 2003)**.

**Table 3-1
Manufacturing Component Standards and Specifications**

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 lb-inch average static torque
Rotatable Phase I Adaptors	Micrometer	Cam and Groove Standard (CP-201)
Spill Container Drain Valve	TP-201.1C	≤0.17 CFH at 2.00 inches H ₂ O
Pressure/Vacuum Vent Valve	TP-201.1E	Positive Pressure: 3.0 ±0.5 inches H ₂ O Negative Pressure: -8.0 ±2.0 inches H ₂ O Leak rate: ≤ 0.05 CFH at +2.0 inches H ₂ O ≤ 0.21 CFH at -4.0 inches H ₂ O